Training and Evaluation Outline Report

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Task Number: 05-CO-1001

Task Title: Construct a Bailey Bridge

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Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	ATP 3-90.4	Combined Arms Mobility	Yes	No
	ATP 5-19 (Change 001 09/08/2014 78 Pages)	RISK MANAGEMENT http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp5_19.pdf	Yes	No
	TM 3-34.23	M2 Bailey Bridge	Yes	Yes
	TM 3-34.85	ENGINEER FIELD DATA {MCRP 3-17A} https://armypubs.us.army.mil/doctrine/DR_pubs/dr_b/pdf/tm3_34x85.pdf	Yes	No

Conditions: The element receives a mission to construct a bailey bridge capable of carrying Military Load Classification (MLC) 70 wheeled and tracked vehicles in a normal crossing. A site reconnaissance has been completed, and the bridge location has been selected. The element crosses a gap that is 23.8 to 26.8 meters wide with prepared abutments. Direct enemy fire has been suppressed from the bridge site, and internal communications have been established. Site security is provided. The element has one Bailey bridge and one erection set.

Note: The Commander must still determine at what level of training they would want the element to perform. Crawl, walk or run. This can only be determined after consideration as to the units training level.

The Commander prior to evaluating an element in the conduct of the task must determine if it will be conducted in a Live, Virtual, or Constructive environment, additionally it must also be determined which condition as described below that the element will conduct the task. The selection made for this task is at a trained level of proficiency. The commander must determine which of the environments below will best suit the unit and the proficiency level at which the unit is. When conducting crawl or walk level training units should not increase the intensity until the unit has achieved the standards and then unit trainers should include variables that increase proficiency in all conditions.

Note: The condition statement for this task is written assuming the highest training conditions reflected on the Task Proficiency matrix required for the evaluated unit to receive a "fully trained" (T) rating.

Note: Condition terms definitions:

Dynamic Operational Environment: Three or more operational and two or more mission variables change during the execution of the assessed task. Operational variables and threat Tactics, Techniques, and Procedures (TTPs) for assigned counter-tasks change in response to the execution of Blue Forces (BLUFOR) tasks.

Complex Operational Environment: Changes to four or more operational variables impact the chosen friendly COA/mission. Brigade and higher units require all eight operational variables of Political, Military, Economic, Social, Infrastructure, Information, Physical environment, and Time (PMESII-PT) to be replicated in varying degrees based on the task being trained.

Single threat: Regular, irregular, criminal or terrorist forces are present.

Hybrid threat: Diverse and dynamic combination of regular forces, irregular forces, and/or criminal elements all unified to achieve mutually benefiting effects.

Some iterations of this task should be performed in MOPP 4.

Standards: The element constructs a bailey bridge capable of carrying MLC 70 wheeled and tracked vehicles. The time required to perform this task is increased when conducting it in Mission Oriented Protective Posture (MOPP) 4.

Note: Leaders are defined as the Commander, Executive Officer, First Sergeant, Operations Sergeant, Platoon Leaders, Platoon Sergeants, Squad Leaders, and Team Leaders.

Live Fire Required: No

Objective Task Evaluation Criteria Matrix:

Plan and Prepare			Execute						Assess
Operational Environment		Training Environment (L/V/C)	% of Leaders Present at Training/Authorized	% of Soldiers Present at	External Eval	% Performance Measures 'GO'	% Critical Performance Measures 'GO'	% Leader Performance Measures 'GO'	Task Assessment
CO & BN									
Dynamic and Complex (4+ OE Variables and Hybrid Threat)	Night	IAW unit CATS statement.	>=85%	>=80%	Yes	>=91%	All	>=90%	**T**
	Day		75-84%			80-90%		80-89%	**T-**
Dynamic (Single Threat)	Night		65-74%	75-79%	No	65-79%			**P**
	Day		60-64%	60-74%		51-64%	<All	<=79%	**P-**
Static (Single Threat)			<=59%	<=59%		<=50%			**U**

Remarks: None

Notes: None

Safety Risk: Medium

Task Statements

Cue: None

DANGER

Leaders have an inherent responsibility to conduct Risk Management to ensure the safety of all Soldiers and promote mission accomplishment.

WARNING

Risk management is the Army's primary decision-making process to identify hazards, reduce risk, and prevent both accidental and tactical loss. All Soldiers have the responsibility to learn and understand the risks associated with this task.

CAUTION

Identifying hazards and controlling risks across the full spectrum of Army functions, operations and activities is the responsibility of all Soldiers. A safety briefing should be conducted prior to any bridge construction.

Performance Steps and Measures

NOTE: Assess task proficiency using the task evaluation criteria matrix.

NOTE: Asterisks (*) indicate leader steps; plus signs (+) indicate critical steps.

STEP/MEASURE	GO	NO-GO	N/A
+* 1. The element leader plans and prepares for bridge construction.			
a. Selects a double-truss, double-story Bailey bridge.			
+ b. Ensures that all required equipment is available.			
* c. Issues the company order.			
(1) Assigns platoon tasks (assigns the bridge centerline to one platoon and the truss assembly to another platoon on each side of the bridge).			
(2) Outlines a construction sequence.			
(3) Demands adherence to safety procedures according to the units standing operating procedure (SOP) and current Field Manual.			
(4) Outlines the procedures to follow in the event of an enemy attack.			
+ d. Establishes material storage areas that provide vehicle turnarounds and camouflages the areas according to the tactical situation.			
+ 2. The platoon leader in charge of the bridge centerline assumes overall responsibility for the bridge construction.			
+ a. Supervises the roller layout to ensure that the—			
(1) Tops of all plain and rocking rollers are on the same horizontal plane and align under the placement control lines.			
(2) Placement control lines are placed 2.26 meters on each side of the centerline.			
(3) Grillage is constructed according to the bridge design.			
(4) Construction rollers are placed 5 to 10 centimeters below the plane of the remaining rollers.			
(5) Number of rows of plain rollers and the number of plain/rocking rollers per row matched the design requirements.			
(6) Rows of rollers are perpendicular to the bridge centerline.			
b. Organizes a work site layout to fit the construction sequence.			
+ c. Supervises the construction of the launching nose according to the bridge design.			
d. Assigns unloading and assembly crew responsibilities to squad leaders and designates transom, bracing, and decking crews.			
+ 3. The transom crew installs the transoms.			
+ a. Places transoms according to the bridge design.			
+ b. Installs transom clamps loosely.			
+ c. Coordinates the unloading and installation of transoms.			
+ 4. The bracing crew installs the bracing after the transoms are placed.			
+ a. Installs rakers, initially leaving them loose.			
+ b. Installs sway braces so that the turnbuckles are all on the same side of the bridge.			
+ c. Tightens all transom clamps, sway braces, and rakers after they are installed in the first-story bay.			
+ 5. The decking crew installs the deck.			
+ a. Places chess (decking) on the construction transom under the stringers in the first bay of the bridge.			
+ b. Places stringers on the transoms.			
+ c. Installs each stringer on its edge over the sway brace turnbuckles until the sway braces are tightened.			
+ d. Installs the chess and ribbands on the stringers.			
+ 6. The leader in charge of the truss assembly crews supervises truss assemblies.			
+ a. Assigns unloading and assembly responsibilities to squad leaders and designates the first- and second-story assembly crews.			
+ b. Coordinates the assembly of the first- and second-story trusses so that the second-story construction lags two bays behind the first-story construction.			
+ 7. The first-story panel crew constructs first-story trusses.			
+ a. Places the inner truss with the panel pins pointing outward and the outer truss with the panel pins pointing inward.			
+ b. Installs the panel pins so that the slot in the head of the pin is horizontal.			
+ c. Installs all safety clips in the panel pins.			
+ 8. The second-story panel crew constructs the second-story trusses.			
+ a. Prepares the outer truss with the panel pins pointing inward and the inner truss with the panel pins pointing outward.			
+ b. Installs the panel pins so that the slot in the head of the pin is horizontal.			
+ c. Installs bracing frames and chord bolts, initially leaving them loose.			
+ d. Tightens bracing frames and chord bolts after the second-story bay is completely installed.			

+ e. Ensures that no one is standing beneath the second-story panels while they are being installed.			
+* 9. The leader in charge of the bridge centerline controls the launching of the bridge.			
+ a. Launches the bridge partially when a sufficient portion of the bridge is built so that the first bay is over the rocking rollers to counterbalance the launching nose.			
+ b. Locks the bridge into position by inserting pickets through the truss into the rocking roller.			
+ c. Keeps the speed of the launch at a slow, controlled rate and ensures that the bridge remains aligned on the centerline during the launch.			
+ d. Ensures that the far-bank rocking rollers are positioned to receive the end of the launching nose.			
+ e. Ensures that only the rocking rollers carry the bridge after the launching nose reaches the far-bank rocking rollers.			
+ f. Coordinates the lowering of the bridge.			
Note: Only one end of the bridge is lowered at a time.			
+ 10. The first-story panel, transom, and bracing crews remove the launching nose and lower the far-bank end of the bridge.			
+ a. Dismantles the launching nose trusses after removing the transoms and braces.			
b. Stacks all bridge parts from the launching nose neatly out of the way.			
+ c. Lowers the far-bank end of the bridge.			
(1) Installs end posts.			
(2) Ensures that the jacks matched by checking the manufacturer's name or the model number.			
Note: This check ensures that the unit only uses jacks with the same tooth pitch.			
(3) Lowers the end of the bridge by raising all jacks in unison.			
(4) Uses cribbing under the trusses to catch the bridge if it slips off the jacks.			
(5) Seats the end posts in the bearing plates.			
+ d. Installs ramps on the far-bank end of the bridge according to the bridge design.			
+ 11. The decking crew jacks down the near-bank end of the bridge and installs the ramps.			
+ a. Lowers the near-bank end of the bridge. Uses the same procedure as is used for the far-bank end. (see substeps 10c(1) through 10c(5)).			
+ b. Installs ramps on the near-bank end of the bridge according to the bridge design.			
+ c. Installs the wear tread.			
+* 12. The leader in charge of the bridge centerline supervises the completion of the bridge construction.			
a. Ensures that the element disassembles and reloads the rollers onto the transport vehicles.			
b. Ensures that the element reloads the launching nose components onto the transport vehicles.			
+ c. Supervises the final anchoring of the bridge.			
+ d. Inspects the bridge to ensure that all panel pins are installed and safely pinned and that all clamps and bolts are completely tightened.			
e. Posts bridge classification signs on both sides of the bridge.			
f. Reports the bridge completion to the element leader.			
+ 13. The element leader reports the completion of the bridge to higher headquarters.			

TASK PERFORMANCE / EVALUATION SUMMARY BLOCK

ITERATION	1	2	3	4	5	M	TOTAL
TOTAL PERFORMANCE MEASURES EVALUATED							
TOTAL PERFORMANCE MEASURES GO							
TRAINING STATUS GO/NO-GO							

ITERATION: **1 2 3 4 5 M**

COMMANDER/LEADER ASSESSMENT: **T P U**

Mission(s) supported: None

MOPP 4: Sometimes

MOPP 4 Statement: None

NVG: Never

NVG Statement: None

Prerequisite Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	07-2-1342	Conduct Tactical Movement (Platoon-Company)	07 - Infantry (Collective)	Approved

Supporting Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	05-CO-0018	Conduct Report Procedures	05 - Engineers (Collective)	Approved
	05-PLT-1021	Conduct a River Reconnaissance	05 - Engineers (Collective)	Approved
	05-PLT-3003	Camouflage Equipment	05 - Engineers (Collective)	Approved
	05-PLT-3006	Establish Work Site Security for a General Engineering Mission	05 - Engineers (Collective)	Approved
	71-CO-5100	Conduct Troop Leading Procedures for Companies	71 - Combined Arms (Collective)	Approved

OPFOR Task(s):

Task Number	Title	Status
71-CO-8505	OPFOR Execute Reconnaissance	Approved
71-CO-8510	OPFOR Disrupt	Approved

Supporting Individual Task(s):

Step Number	Task Number	Title	Proponent	Status
	052-197-1130	Identify Bailey Bridge Components	052 - Engineer (Individual)	Approved
	052-197-1300	Maintain Fixed Bridges	052 - Engineer (Individual)	Approved
	052-197-2021	Direct Maintenance of Fixed Bridges	052 - Engineer (Individual)	Approved
	052-197-2055	Organize Crews and Duties in the Assembly of a Bailey Bridge	052 - Engineer (Individual)	Approved
	052-197-3007	Direct a Site Layout for a Double-Single Bailey Bridge	052 - Engineer (Individual)	Approved
	052-197-3011	Direct the Assembly of a Bailey Bridge	052 - Engineer (Individual)	Approved
	052-197-3075	Direct Site Layout for a Bailey Bridge	052 - Engineer (Individual)	Approved
	052-197-4028	Determine Bailey Bridge Logistical Requirements	052 - Engineer (Individual)	Approved
	052-197-4051	Inspect Fixed-Bridge Maintenance	052 - Engineer (Individual)	Approved
	052-198-1331	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on Bridging Equipment	052 - Engineer (Individual)	Approved
	052-198-2162	Direct Preventive-Maintenance Checks and Services (PMCS) of Bridging Equipment	052 - Engineer (Individual)	Approved
	052-198-3105	Supervise Preventive-Maintenance Checks and Services (PMCS) of Bridging Equipment	052 - Engineer (Individual)	Approved

Supporting Drill(s): None

Supported AUTL/UJTL Task(s):

Task ID	Title
ART 4.1.7.2.7	Construct Bridges

TADSS

TADSS ID	Title	Product Type	Quantity
GTA 05-04-035	Model Bridge, Panel Bridge, M2 Bailey Type	GTA	1

Equipment (LIN)

LIN	Nomenclature	Qty
R68044	Radio Set: AN/VRC-90F(C)	1
R68146	Radio Set: AN/VRC-91F(C)	1
C05002	Computer System Digital: AN/PYQ-10(C)	1
A79381	Antenna Group: OE-254()/GRC	1
C27503	Computer System: Digital AN/TYQ-105(V)1	1
C27707	Computer System: Digital AN/TYQ-109(V)1	1
D17191	Instrument Set Reconnaissance and Surveying: AN/TKQ-5	1
E05008	Encryption-Decryption Equipment: KGV-72	1
R45543	Radio Set: AN/VRC-92F(C)	1
Z01320	Radio Set: Hand Held Radio	1
R87139	Radio Set: ANVRC-104(V)3 150 Watt wPRC-150 HF Radio	1
C05036	Computer Set Digital (JBC-P): AN/UYK-128B(V)3	1

Materiel Items (NSN)

NSN	LIN	Title	Qty
5420-00-530-3784	C23017	Bridge Fixed: Highway Pony Truss Portable Panel Bailey Type	1
5420-00-530-3785	C22058	Bridge Erection Set, Fixed Bridge, Bailey Type	1

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to the current Environmental Considerations manual and the current GTA Environmental-related Risk Assessment card. .

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. .